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Impact of the Implementation Challenges of Nigeria's Climate Change Act 2021 on Nigeria's Green Economy

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Abstract

Climate change remains a major threat to the protection and sustainability of the environment (green economy). Existing studies acknowledge that Nigeria faces struggle in transitioning to renewable energy, but fail to provide sufficient exploration of the challenges undermining Nigeria's drive towards achieving green economy. This study, therefore, unravels how the challenges facing the implementation of Nigeria's Climate Change Act 2021 undermine Nigeria's sincere drive towards green economy. The objectives of the study are to: (1) ascertain whether the delay by the National Council on Climate Change (Action Plan) in the development and implementation of national policy document contributes to the persistence of greenhouse gas emission in Nigeria, and (2) find out whether the challenges of carbon pricing undermine the implementation of the Development Association of Renewable Energy

(DARE) projects in Nigeria. The study utilized the institutional theory and adopted qualitative method of data collection by combining documentary data and interview responses. Content analysis was used for data analysis. The findings show that the delay by the National Council on Climate Change (Action Plan) in the development and implementation of national policy document contributes to the persistence of greenhouse gas emission, and that the challenges of carbon pricing undermine the implementation of the Development Association of Renewable Energy projects in Nigeria. The study recommends the need to strengthen emergency responses, improve institutional coordination, provide adequate funding, establish a clear carbon pricing mechanism, and for the diversification of the Nigerian economy.

Keywords: *Climate Change, Greenhouse Gases, Carbon Pricing, DARE projects, Action Plan.*

1. Introduction

Across Africa, the spectre of climate change looms large, threatening the continent's ecosystems, economies, and human existence. According to the UN Climate Change (2020), rising temperatures and sea levels, altered precipitation patterns. Similarly, intensified weather events are jeopardizing human health and safety, food and water security, as well as socio-economic development in Africa. The continent is among the least significant contributors to greenhouse gas (GHG) emissions, yet it experiences the severest consequences of climate change. Climate change directly affects temperature and precipitation, exposing the African agricultural sector, the most susceptible component of the African economy, to this challenge. Nearly all countries on the continent have suffered severe losses and damages, including water shortages, diminished agricultural production, and decreased economic growth as a result of this global issue (USDA, 2023). Climate change has been a more significant threats to Nigeria's economic development, sustainability of the environment, and human wellbeing.

In response, the Climate Change Act (CCA) 2021 was enacted by the Nigeria government to mitigate and adapt to climate change impacts. The Act contains 8 sections which explained its objectives, administration, finance, action plan, and implementation. Section 1 of the CCA addresses its objectives and applicability as a framework for attaining sustainable economic development, inclusive green growth, and low greenhouse gas (GHG) emissions, while Section 2 establishes the National Council on Climate Change (NCC), which is empowered to formulate policies and make decisions about all issues related to climate change in Nigeria. Whereas Section 3 of the CCA creates a Secretariat and the Office of the Director-General to manage the Council's scientific, technical, and administrative duties, Section 4 establishes a Climate Change Fund. According to Section 5, the Federal Ministries of Environment and National Planning are in charge of establishing Nigeria's carbon budget, or the authorized quantity of GHG emissions that is acceptable over a given time period, as well as the budgetary period. The carbon budget must be updated on a regular basis in accordance with Nigeria's Nationally Determined Contributions (NDC) in order to meet its global commitments. The MDAs', public bodies', and private entities' climate change responsibilities are outlined in Section 6. Meanwhile, REDD+, which stands for reducing emissions from deforestation and damage to forests as well as the role of conservation, sustainable forest management, and the development of forest carbon reserves, is covered in Section 7. The final Section (Section 8) of the CCA, with respect to offences, highlights the punishment for violating relevant sections of the CCA.

Despite the Act's provisions, there are some daunting challenges constraining the Climate Change Act from attaining the green economy in Nigeria. These challenges range from delay in the development and implementation of the Act by the NCCC to other challenges, including that of funding, facing carbon pricing which has made it difficult for the Development Association for Renewable Energy (DARE) projects in Nigeria. The National Council on Action Plan's delay in implementing the NDC under the Paris Agreement has impeded the nation's attempts to cut emissions of greenhouse gases. This delay has resulted in the continued dominance of fossil fuels in Nigeria's energy mix, which contributes significantly to the country's greenhouse gas emissions (Ehimen, 2020). Weakness of institutions and governance in Nigeria has also been found to hinder Nigeria's strides towards abating the emissions of greenhouse gases (Murtala, 2021). Specifically, Murtala (2021)

identified issues such as limited capacity, and coordination problems among government agencies, arguing that overcoming these challenges is crucial for the effective implementation of GHG reduction measures in Nigeria.

Ogbonnaya et al. (2019) noted that inadequate public education and awareness concerning the impacts of climate change and the benefits of transitioning to a low-carbon economy has contributed to the persistence of greenhouse gas emissions in Nigeria. Ikelegbe (2020) also posited that Nigeria's infrastructure deficit, particularly in the energy sector, has hindered the country's efforts to reducing greenhouse gas emissions. Acheampong (2018) contended that the National Council on Action Plan's delay in implementing effective policies and programmes to promote the transition to a low-carbon economy has also hindered Nigeria's efforts to mitigating greenhouse gas emissions. This delay has resulted in the continued emission of greenhouse gases from various sectors, including energy, transportation, and agriculture.

The implementation of renewable energy projects in Nigeria is crucial for reducing the country's greenhouse gas emissions and promoting sustainable development. However, the issue of carbon pricing has undermined the implementation of these projects. Acheampong (2018) hinted that carbon pricing is a critical component of a green economy, but its implementation in Nigeria has been hindered by lack of policy framework and institutional capacity. As noted by Ehimen (2020), the absence of a carbon pricing mechanism in Nigeria has made it difficult for renewable energy projects to compete with fossil fuel-based projects, which has undermined the country's efforts to transition to a low-carbon economy. The lack of a clear carbon pricing policy in Nigeria has created uncertainty and mistrust among investors and stakeholders, which has hindered the development of renewable energy projects.

Obvious from the foregoing discourse is that scholars have mostly attributed the phenomenon of climate change to sundry other factors such as institutional weakness, lack of political will, poor financing, etc., leaving out the critical role of climate related frameworks. While having enormous potential to addressing climate change, many of these laws are

still just words on paper that are ignored and never put into practice. It seems that the government is more concerned with drafting new laws and policies than with the vital responsibility of upholding the integrity of the existing ones (Oyebisi & Adeleke, 2019).

It is in the light of the foregoing discourse that this study investigates how the challenges in the implementation of the Climate Change Act of 2021 undermine Nigeria's drive towards green economy, by posing the following questions:

1. Did the delay by the National Council on Climate Change (Action Plan) in the development and implementation of a national policy document contribute to the persistence of greenhouse gas emission in Nigeria?

2. Does the challenge of carbon pricing undermine the implementation of the Development Association for Renewable Energy (DARE) projects in Nigeria?

2. Theoretical Foundations of Climate Change and Nigeria's Green Economy Aspirations

Institutional Theory provided a robust framework for analyzing how the structures, norms, and practices within institutions shape the outcomes of policy implementation. John W. Meyer and Brian Rowan are notable proponents of the institutional theory. Their seminal work, "*Institutionalized Organizations: Formal Structure as Myth and Ceremony"* (1977) introduced the concept of organizations adopting formal structures to gain legitimacy and support, even if these structures do not necessarily enhance their efficiency. Others such as DiMaggio et al. (1983) and W. Richard Scott (1995) have equally helped to further develop the institutional theory.

Recent literature continues to expand on the institutional theory by exploring its application in various domains, including environmental policy, organizational behaviour, and international relations. For example, Paul Adler and J. Michael Thompson in their work, *"The Emergence of a New Institutionalism"* (2016) discussed how contemporary institutions are increasingly focused on issues such as sustainability and corporate social responsibility. They argued that institutions are adapting to address global challenges, reflecting a shift towards more proactive and integrated approaches to governance and policy.

Some of the central assumptions of the theory include:

- Institutions, including laws, regulations, norms, and values, significantly shape the behaviour of individuals and organizations.

- Organizations and governments often adopt certain practices or structures to gain legitimacy and conform to societal expectations.

- Institutions are not static, but evolve in response to changing social, economic, and political conditions.

- Norms and values within institutions guide behaviour and decision-making.

The theory prioritizes the crucial role of institutions shaping the behaviour of individuals and organizations, positing further that weak institutions can hinder the implementation of these policies. Overall, the institutional theory provides a comprehensive explanation for the delay in the development and implementation of climate related legislations in Nigeria, and highlights the need for institutional reforms and strengthening of governance in the energy sector. Applying this theory to the hypotheses concerning the NCCC and Nigeria's Climate Change Act allows for a deeper understanding of the institutional dynamics influencing environmental outcomes.

The NCCC and the Climate Change Act, while established to address climate change impacts such as greenhouse gas emissions, desertification and flooding, is subject to the constraints and dynamics of the institutions responsible for its development and implementation. The institutional theory posits that formal rules and regulations are often shaped by underlying informal norms and practices. In the case of Nigeria, the NCCC's effectiveness and the implementation of the Climate Change Act are hindered by bureaucratic inefficiencies, weak

enforcement mechanisms, and lack of coordination among various government agencies. For instance, while these institutions set out comprehensive guidelines for addressing climate changes such as desertification and flooding, its implementation faltered due to limited institutional capacity, lack of resources, and inadequate inter-agency cooperation.

Furthermore, the institutional theory emphasizes that institutions adopt certain practices to conform to societal expectations. It can be argued that the ineffectiveness of institutions (NCCC here) towards achieving green economy in Nigeria is basically as a result of the weakness of the agencies set up to make and implement these laws. The theory sees the weakness of agencies as directly proportional to the unsuccessful enforcement of the climate change law. This explains why enacted climate change acts have become mere written documents devoid of enforcement.

Again, the theory posits that institutions responsible for implementing carbon pricing mechanism and renewal energy projects in Nigeria such as the Ministry of Environment and the Nigerian Electricity Regulatory Commission (NERC) lack the capacity and resources to effectively implement these policies. These institutional constraints limit the ability of organizations and individuals to adopt renewal energy technologies and reduce greenhouse gas emission.

3. Methods

The study adopted a qualitative method that combines documentary data and interview-generated data. The documentary (secondary) data were sourced from government reports, policy briefs, books, journals, official documents, newspaper articles, and internet materials. Official documents were obtained from agencies such as the African Development Bank, International Energy Agency, Food and Agriculture Organization, Nigeria Electricity Commission, United Nations Environmental Programme, National Bureau of Statistics (NBS), World Bank, among several others. These documents offered a wealth of information on how the policies were designed, implemented, and assessed as well as on the volume of greenhouse gas emission. The study systematically reviewed these documents to extract data on various aspects of the policies. This involved identifying key sections that discussed the goals of the Nigeria's Climate Change Act, their intended

outcomes, and the specific measures taken to address greenhouse gas emissions.

Primary data were generated through Key Informant Interviews (KIIs), whereby information was generated via interviews with the staff of the Federal Ministry of Environment, Abuja, Nigeria. We randomly selected six staff members based on cognate knowledge, expertise, and availability. We fielded questions that bothered on their knowledge of climate change, environment and climate-related laws, as well as on the challenges and prospects of Nigeria's green economy. Deploying qualitative content analysis, we analysed the responses of the interviewees by transcribing and repeatedly comparing and contrasting them towards establishing inter-subjectivity, while also ensuring objectivity of analysis.

3. Delayed National Policy Document and Greenhouse Gas Emissions in Nigeria

Delay by the National Council on Climate Change (Action Plan) in the development and implementation of a national policy document has contributed to the persistence of greenhouse gas emissions in Nigeria. These delays and negligence have manifested in the form of slow responses to emergencies, poor coordination of agencies, etc.

3.1. Slow Responses to Climate Change Emergencies and Uncontr olled Emissions of GHG

The slow responses to climate change emergencies in Nigeria have had a devastating impact on the country's energy sector, leading to uncontrolled emissions of greenhouse gases. With enormous proven reserves of natural gas and crude oil, Nigeria is Africa's top oil producer (Aigbe et al., 2023). As noted by Udeogu (2025), crude oil export remains a major component of Nigeria's national revenue. With almost 80% of government income, 95% of export earnings, and 90% of foreign exchange earnings coming from the oil and gas industry, Nigeria's

economy is growing significantly (Aigbe et al., 2023). Nigeria's reliance on fossil fuels has continued to drive economic growth, but at a significant environmental cost, because fossil fuels, such as oil and gas, are the major contributors to greenhouse gas emissions. The country's oil industry is a significant driver of emissions, with the extraction, transportation, and combustion of fossil fuels releasing large amounts of carbon dioxide and other pollutants into the atmosphere. Up to 45% of Nigeria's total greenhouse gas emissions come from it, making it a significant contributor to climate change and global warming. Nigeria has made modest progress at reducing gas flaring to less than 10% by 2020, despite having established that goal (Aigbe et al., 2023). Therefore, according to the Nigerian National Petroleum Corporation (NNPC), approximately 11.5% of the world's yearly flaring occurs in Nigeria, where 40% of gas production is flared (Ritchie et al., 2022). Nigeria generated 750.33 billion cubic meters (Bcm) of natural gas and flared 114.35 Bcm (13%), which would have provided over two years' worth of the UK's gas needs between 2010 and 2019. Evidently, 224.9 billion standard cubic feet of gas were flared in 2022, costing $787.2 million in lost revenue (Statista, 2023).

It is clear that the Nigerian government has enacted a number of Acts in an attempt to address oil spills and gas flaring. By giving flare gas buyers title and access to gather flared gas from the designated fields for approved uses, the Nigeria Gas Flare Commercialization Programme (NGFCP) seeks to establish a bankable commercial structure to monetize flared gas. The Petroleum Industry Act (PIA) 2021 seeks to improve the regulatory, budgetary, and governance aspects of Nigeria's oil and gas industry. A 20% reduction in greenhouse gas (GHG) emissions below the business-as-usual emissions scenario by 2030 is the unconditional contribution target set by the government's updated Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement. According to Aigbe et al. (2023), Nigeria established a goal to cut gas flaring to less than 10% by 2020 and possibly eradicate it by 2030. Reaching the goal alone might have significant development co-benefits and save about 64 million tons of CO_2 yearly. However, despite the above-mentioned legislations, there are flaws in the current nationwide flaring ban, and the fines are light and not strictly implemented. Lack of political will, insufficient resources, and intricate power relations that impede efficient enforcement and community involvement have all contributed to the implementation's sluggish pace.

Significant environmental issues still plague the Niger Delta region, highlighting the urgent need for more thorough and efficient implementation (Nriagu et al., 2016). Eliminating gas flaring and dealing with the larger environmental problems in the Niger Delta region still present significant obstacles.

During the interview sessions, our interviewees, who are staff members of the Department of Climate Change and the Department of Drought and Desertification, responded to questions drawn from the research objectives. **Table 1** summarizes the interview questions, the interviewee's responses, and their specific units/departments.

Table 1: *Summary of interview questions and corresponding responses*

S/N	Interview Questions	Interviewee's Response(s)	Interviewee's Department
1.	Does slow response to climate change emergencies contribute to uncontrolled emissions of greenhouse gas from the energy sector?	Yes, there has been slow response to climate change emergencies due to continuous reliance of the country on fossil fuels because the government knows fully well that it contributes to the GDP and revenue of the country and they don't want to take any action that will jeopardize it.	Department of Climate Change
2.	Does poor coordination among government agencies contribute to uncontrolled emissions of greenhouse gas from the transportation sector?	Government agencies engage themselves in policy summersaulting. Today, they bring policy, tomorrow they bring another policy without even implementing the former policies. This lack of coordination has led to uncontrolled emissions of these gases from the transportation sector.	Department of Drought and Desertification
3.	Does insufficient budgetary allocations in the disbursing funds for climate related programme contribute to uncontrolled emissions of greenhouse gas from the agricultural sector?	Yes, there has been inadequate financing for climate change related programmes such as deforesta tion programmes, most times when this financing comes it doesn't trickle down to the ministries, like 70% of the financing don't really go down for the implementation of these climate related programmes. This has an impact as most people still consistently deforest the land for the	Department of Drought and Desertification

		use of firewood and charcoal.	
4.	How have lack of clear policy framework and limited public a wareness discouraged long ter m investment in renewable energy projects?	Lack of clear policy framework brings about uncertainty and risk for investors, making it difficult for them to predict the future of the renewable energy market and potential returns on their investments. Also, lack of aw areness on carbon pricing mechanism makes it difficult for investors to understand the potential cost and benefits of investing in renewable energy projects so as to make informed decisions.	Department of Climate Change
5.	How has economic constraints led to limited access to electricity, especially in rural areas?	Carbon pricing can increase the cost of electricity making it less affordable for rural household and communities that are already struggling to make ends meet. The connecting cost to the national grid can be out of reach for most people in rural areas.	Department of Climate Change
6.	How have technical and infrast ructural deficiencies led to difficulty in the transition to renewable energy sources in Nigeria?	Inadequate infrastructure has led to inadequate metering and billing syste ms, making it difficult to measure and bill customers for the energy they consume. Again lack of energy storag e facilities to store excess energy gene rated from renewable sources and stabilize the grid has led to inadequate energy transmission.	Department of Climate Change

Source: *Interview with some staff members of the Departments of Climate Change and Drought and Desertification Department, February, 2025.*

Table 2 shows the volume of greenhouse gas emissions in Nigeria from the energy sector, between 2021 and 2024.

Table 2: *Volume of greenhouse gas emissions in Nigeria from the Energy Sector, 2021-2024*

S/N	Types of GHG emissions	Volume emitted between 2021- 2024
1	Carbon dioxide (CO2)	2.04 t
2	Methane (CH4)	0.01 t
3	Nitrous oxide (N2O)	0.01 t

Source: *Climate world watch, 2024 https://www.climatewatchdata.org/*

3.2. Poor Coordination among Agencies and Uncontrolled Transpo rtation GHG Emission

Apart from slow responses to emergencies, poor coordination among government agencies has also led to uncontrolled GHG emission in the

transport sector. Nigeria's efforts to combat climate change are beset by the number of departments and agencies tasked with handling these problems. The main responsibility for responding to the problems posed by climate change currently rests with a number of government departments and agencies, many of which operate ineffectively. These organizations include the National Environmental Standards and Regulations Enforcement Agency (NESREA), the Nigerian Meteorological Agency (NIMET), which focuses on meteorological issues, the Department of Climate Change within the Federal Ministry of Environment, and the National Planning Commission (NPC) (Ogunbode et al., 2019).

Lack of coherence in decision-making processes and an inability to precisely evaluate how well climate change laws reduce emissions and aid adaptation are caused by the diversity of organizations involved in responding to climate change (Ladan, 2019). The nation's overall progress in tackling climate change concerns is hampered by lack of a cohesive and efficient approach, which compromises action coordination and resource allocation (Davies & Fakir, 2020). Overlapping mandates, ineffective use of resources, and a lack of accountability are frequently the outcomes of the division of duties across several agencies and departments. Measuring the impact and efficacy of climate change policies and efforts is made more difficult by the lack of defined lines of authority and coordination procedures (Davies & Fakir, 2020). The lack of coordination between the Federal Ministry of Environment and the NNPC has led to inadequate regulation and monitoring of oil and gas operations, resulting in significant greenhouse gas emissions. For example, in 2020, the NNPC reported that it had flared 193 billion cubic feet of gas, which is equivalent to 23.4 million tons of CO_2 emissions. Similarly, lack of coordination between NIMET and the Federal Ministry of Environment has led to inadequate data and monitoring on climate change, making it difficult to develop and implement effective mitigation strategies. For example, in 2020, the Federal Ministry of Environment reported that it had not received any data from NIMET on greenhouse gas emissions from the agriculture sector.

The Nigerian Meteorological Agency (NIMET) whose responsibility is to provide climate data and information to support the development of policies and programmes towards reducing GHG emissions from the transportation sector eventually decided to cooperate and join in the strengthening of climate change action in 2024, since the enactment of climate change 2021. At a meeting held at the Abuja office of NCCC on 20th August 2024, between the Director General and Chief Executive Officer of NIMET, Professor Charles Anosike, and his NCCC counterpart, Dr. Nkiruka Maduekwe, both agencies resolved to strengthen cooperation in climate actions in Nigeria, and in other areas.

With an estimated 7.3 billion metric tons of carbon dioxide emissions worldwide in 2020, the transportation sector is a significant contributor to atmospheric CO_2 pollution. Road (surface) transportation accounts for the majority of transportation in Nigeria, and it contributes around 20% of the world's CO_2 emissions. Although relatively small amounts of methane (CH_4) and nitrous oxide (N_2O) are released during fuel combustion, this involves an excessive use of internal combustion engine vehicles (ICEs), which contributes significantly to CO_2 emissions through the combustion of petroleum-based products like PMS, AGO, and ATK. Given that the primary cause of global warming and the ensuing hazard of altered climatic patterns is the burning of these fuels by automotive engines, this does not bode well for the safety of our environment. The distribution of energy consumption in the transportation industry by source and mode is displayed in Table 3.

Table 3: *Structure of energy consumption in the transport sector by mode and by source*

Type	Mode	Fossil fuel as a motor fuel (10^3 Ton)	Total
Passenger urban	Car	2219.65	2220.0
	Public (Bus)	515.49	515.5
	Others (motor bikes)	180.24	180.2
	Sub total	2915.47	2915.5
Passenger intercity	Car	1158.09	1158.1
	Bus	558.52	558.5
	Train(diesel)	0.156	0.156
	Train(electric)	0.00	0
	Plane	149.68	149.68
	Sub total	1866.44	1866.4
Freight	Truck local	3336.96	3337.0
	Truck long distance	770.21	770.2
	Train(diesel)	0.38867	0.38867
	Train(steam)	0.00	0.0
	Train (electrical)	0.00	0.0
	Ship	0.00	0.0
	Pipeline	7.70	7.70
	Sub total	1115.26	1115.26
Miscellaneous		295.00	295.0
Grand total		6192.18	6192.8

Source: *Energy commission of Nigeria (2008)*

Table 3 reveals that while Passenger urban and its mode totaled 2915.47, Passenger intercity and its mode totaled 1866.44. Whereas Freight and its mode totaled 1115.26, Miscellaneous totaled 295.00, making a grand total of 6192.18 (all in 10^3 tons).

4. Carbon Pricing and the Dare Projects Implementation in Nigeria

The challenge of carbon pricing undermines the implementation of the Development Association for Renewable Energy (DARE) projects in Nigeria. Through such practices as unclear policy/limited awareness, economic constraints, and technical/infrastructural deficiencies, the

implementation of various aspects of the DARE project in Nigeria has been severely hampered.

4.1. Unclear Policy/Limited Awareness and Discouraged Long Term Investment

The challenges of carbon pricing in Nigeria have had a significant impact on the country's ability to attract long-term investment in renewable energy projects. Lack of a clear policy framework has created uncertainty and unpredictability for investors. Without a well-defined carbon pricing mechanism, investors are hesitant to commit to renewable energy projects, as they are unsure of the potential returns on their investment. This uncertainty has led to a decline in investment in the sector, as investors are more likely to prioritize projects with clearer and more predictable revenue streams. Limited public awareness has equally been a challenge, as people do not know much about the carbon pricing. Public awareness about the importance of carbon pricing and its role in promoting renewable energy is limited. Many Nigerians are not aware of the benefits of carbon pricing, such as reducing greenhouse gas emissions and promoting sustainable development. This lack of awareness has made it difficult to build public support for carbon pricing initiatives, which are essential for creating a favorable investment climate for renewable energy projects.

According to reports by the International Energy Agency (2023a, 2023b), Nigeria's renewable energy sector has significant potential for growth, but the lack of a clear policy framework and limited public awareness have hindered the development of the sector. The report noted that Nigeria's renewable energy sector requires a stable and predictable policy environment to attract investment and promote growth. The report also highlighted the importance of public awareness and education in promoting the development of renewable energy projects.

4.2. Economic Constraints and Limited Access to Electricity

Economic constraints and poverty have significantly contributed to the inaccessibility of electricity in rural areas in Nigeria. This is so, because the cost of implementing carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, can be prohibitively expensive for many households and businesses in rural areas. A 2023 survey by the

International Energy Agency (IEA) found that over 60% of rural households in Nigeria reported reduced access to electricity due to rising energy costs, with many citing carbon-related price hikes as a contributing factor. The cost of electricity is already high in these areas, and the additional cost of carbon pricing would make it even more unaffordable for many people. Furthermore, poverty is a significant challenge in rural areas of Nigeria, with many households living below the poverty line. Lack of access to electricity is a major obstacle to economic development and poverty reduction in these areas. According to the World Bank's Energy Progress Report 2023, Nigeria's rural electrification rate stagnated at around 30% from 2021 to 2024, with energy poverty worsening in regions most affected by rising energy costs. However, the cost of implementing carbon pricing mechanisms would likely be passed on to consumers, making electricity even more unaffordable for poor households. This would exacerbate the existing energy poverty and inequality in rural areas, making it even more difficult for people to access basic energy services. Rural populations in Nigeria are among the poorest, with limited disposable income to spend on energy. Carbon pricing has further strained their budgets, making electricity even less accessible. The National Bureau of Statistics (NBS) reported in 2023 that over 70% of rural households in Nigeria live below the poverty line, with many spending more than 20% of their income on energy. Small-scale businesses in rural areas, such as agro-processing and retail, rely heavily on affordable electricity. The increased cost of energy due to carbon pricing has forced many to shut down or operate at reduced capacity. A 2024 survey by the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) found that 40% of rural businesses reported a decline in productivity due to higher energy costs. Urban areas, with better infrastructure and access to alternative energy sources, have been better able to absorb the costs of carbon pricing, while rural areas have been left behind. A 2024 study by the African Development Bank (AfDB) found that urban electrification rates in Nigeria remained at 80%, while rural rates lagged significantly, highlighting the growing disparity.

The economic constraints and poverty in rural areas have also limited the ability of households and businesses to invest in renewable energy technologies, such as solar or wind power. While these technologies have the potential to provide clean and reliable energy, they are often more expensive than traditional fossil fuel-based energy sources. The cost of carbon pricing would make it even more difficult for households and businesses in rural areas to afford these technologies, further limiting their access to electricity. According to a report by the World Bank (2023), lack of access to electricity is a major challenge in rural areas of Nigeria, with over 80 million people living without access to electricity. The report noted that the cost of electricity is a significant barrier to access, with many households unable to afford the high cost of electricity. The report also highlighted the importance of addressing the economic constraints and poverty in rural areas in order to improve access to electricity and promote economic development.

5. Conclusion and Recommendations

The challenges of delayed enactment and implementation of the Nigeria's Climate Change Act of 2021 have significantly undermined Nigeria's green economy aspirations. First, a combination of gross ineptitude and laxity on the part of the Nigerian government, especially the National Council on Climate Change (Action Plan) in the development and implementation of the national policy document has contributed to the persistence of greenhouse gas emissions in Nigeria. Delays such as slow response to climate change emergencies, inadequate government agency coordination and insufficient allocation of funds in disbursing climate change programme have impacted Nigeria's ability to reduce greenhouse gas emissions. Sectors such as energy, transportation and agricultural sectors are affected by these delays. Second, the challenges of carbon pricing have continued to undermine the implementation of Development Association of Renewable Energy (DARE) projects in Nigeria. Fundamental issues of unclear policy/limited awareness, economic constraints, and technical/infrastruct ural deficiencies have all combined to discourage long term investment in renewable energy projects, which is the hallmark of the progressive transition to green economy.

In the light of the foregoing, the study proffers the following recommendations for policy actions:

I. Nigeria should promote renewable energy transition by investing more in initiatives using renewable energy to lessen dependency on fossil fuels. There is need for an enhanced and improved institutional coordination by creating a centralized task force comprising representatives from the Ministry of Transportation, NCCC and environmental agencies to streamline climate change action efforts. In addition, the Nigerian government should incentivize the adoption of electric vehicles and improved public transportation infrastructure with less or zero emissions. Adequate funding should be secured by ensuring increase in budgetary allocation from the government and the private sectors.

II. Establishment of a clear and consistent carbon pricing framework in order to provide certainty for investors. Also, public awareness campaign should be enhanced in order to educate stakeholders, including businesses, policymakers and the public on the benefits of carbon pricing and its role in promoting renewable energy investments. There should be gradual transition in the aspect of carbon pricing implementation with low carbon pricing policies and increasing it gradually. The implication, therefore, is that energy infrastructure upgrade should be encouraged by investing in modernized national grid and development of smart grid technologies. Ultimately, there is need for Nigeria to balance growth with carbon pricing and renewable energy projects through the diversification of the economy into agricultural, manufacturing, and services sectors.

References

Acheampong, E. (2018). The impact of climate change on Nigeria's economy. *Journal of Sustainable Development, 11*(2), 1-10.

Adler, P. S., & Thompson, J. M. (2016). The emergence of a new institutionalism. *Journal of Management Studies, 53*(5), 661-686.

AfDB (2024). *Socio-economic impact of carbon pricing in Africa.* Retrieved from. https://www.iea.org/nigerianenergytransition/en/

Aigbe, G.O., Stringer, L.C., & Cotton, M. (2023). Gas flaring in Nigeria: a multi-level governance and policy coherence analysis. *Anthropocene Science, 2*(1), 31–47.

Davies, M., & Fakir, S. (2020). Climate change governance in South Africa: Challenges and opportunities. *Environmental Development, 35*(2), 100-544.

DiMaggio, P.J., & Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147-160.

Ehimen, E. (2020). Assessing the effectiveness of Nigeria's climate change policy: A critical analysis. *Journal of Environmental Policy and Planning, 22*(1), 1-12.

Energy commission of Nigeria (2008). *Assessment of energy options and strategies: Energy demand, supply and environmental analysis for sustainable energy development (2000-2030).* Federal Ministry of Energy

IEA (2023a). Nigeria's *energy sector and the impact of carbon pricing on energy affordability.* retrieved from https://www.iea.org/nigeria's energy sector/en/

IEA (2023b). Nigeria's energy transition challenges and the impact of carbon pricing. intensification: what is its role in climate smart agriculture? *Curr. Opin. Environ. Sustain.* 8, 39-48.

Ikelegbe, A. (2020). The role of green economy in mitigating climate change in Nigeria. *Journal of Environmental Science and Health, Part C, 38*, 1-10.

Ladan, S.I. (2014) An appraisal of climate change and agriculture in Nigeria. *J Geogr Reg Plann* 7: 176-84.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology, 83*(2), 340-363.

Murtala, S. (2021). Nigeria's green economy and climate change: A review of the current trends and future directions. *Journal of Sustainable Development, 14*(1), 1-12.

NBS (2023). Nigeria electricity report Q3 2023. https://www.nigerianstat .gov.ng/elibrary/read/1241448

Nriagu, J., Udofia, E. A., Ekong, I., & Ebuk, G. (2016). Health risks associated with oil pollution in the Niger Delta, Nigeria. *International journal of environmental research and public health, 13*(3), 346. https://doi.org/10.3390/ijerph13030346

Ogbonnaya, C., Abeykoon, C., Damo, U.M. & Turan., A. (2019). The current and emerging renewable energy technologies for power generation in Nigeria: A review. *Thermal Science and Engineering Progress.* 13. https://doi.org/10.1016/j.tsep.2019.100390

Ogunbode, C. A., Okereke, C., Adeola, O. A., & Onyemaobi, D. (2019). Climate change legislation in Nigeria: A critical review of the challenges and opportunities. *Journal of Climate Policy, 3*(2), 1018-1031.

Oyebisi, T. O., & Adeleke, A. Q. (2019). The role of existing laws and policies in addressing climate change in Nigeria. *Journal of Environmental Management and Tourism, 10* (1), 1-13.

Scott, W.R. (1995). *Institutions and organizations: Ideas, interests and identities.* Sage publishers

Statista (2023). *Contribution of oil and natural gas sector to GDP in Nigeria from the 4th quarter of 2018 to the 2nd quarter of 2023.*

Udeogu, C.U. (2025). Political economy of the US-OPEC tussle in the global oil market: understanding Nigeria's revenue and debt crises. *International Politics, 62*(3) https://doi.org/10.1057/s41311-025-00711-y

United Nations Framework Convention on Climate Change. (2020). *Climate change is an increasing threat to Africa.* https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa

USDA. (2023). *Climate change and agriculture: effects and adaptation*. Retrieved from https://www.usda.gov

World Bank (2023). *Access to electricity (% of population) – Nigeria.* Retrieved from https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=NG